

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

In the Matter of)	Gen Docket No. 90-314
)	ET Docket No. 92-100
)	
Amendment of the Commission's)	RM-7140, RM-7175, RM-7617,
Rules to Establish New)	RM-7618, RM-7760, RM-7782,
Personal Communications)	RM-7860, RM-7977, RM-7978,
Services)	RM-7979, RM 7980
)	
)	PP-35 through PP-40, PP-79
)	through PP-85

To: The Commission

COMMENTS OF ASSOCIATION OF AMERICAN RAILROADS

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November 9, 1992

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COMMENTS OF ASSOCIATION OF AMERICAN RAILROADS

The Association of American Railroads ("AAR"), by its undersigned counsel, hereby responds to the invitation for comments issued by the Commission in the Notice of Proposed Rule Making and Tentative Decision in the above-captioned proceeding, released August 14, 1992 (hereinafter "Notice").

I. PROTECTION OF FIXED MICROWAVE OPERATIONS

AAR's focus in these Comments is on the technical standards proposed by the Commission for protection of fixed microwave operations in the 2 GHz band. See Notice at paragraphs 104-124.

AAR agrees with the Commission's tentative conclusion at paragraph 106 of the Notice that an industry advisory committee on Personal Communications Systems ("PCS") is not necessary at this time. However, this position is premised on the assumption that the interference protection criteria embodied in the EIA/TIA

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Standard 10-E^{1/} and in Section 94.63 of the Commission's Rules are adopted as the criteria for coordination between PSC and 2 GHz fixed microwave facilities.

AAR strongly supports the Commission's goal set forth at paragraph 109 of the Notice that existing microwave operations in the 2 GHz band be protected if spectrum is shared with PCS facilities, and AAR agrees with the Commission regarding the need to clearly define the rights of existing 2 GHz fixed microwave operators to be protected from interference. In AAR's view, EIA/TIA Standard 10-E has served the industry well by providing essential interference protection to support reliable point-to-point microwave systems used by the railroads, electric utilities, pipeline companies and public safety organizations. AAR and its member railroads believe that it would be dangerous to relax in any way the existing interference protection standard in light of the critical operations supported and controlled by the affected fixed microwave systems.

AAR recommends that in addition to adopting the criteria of EIA/TIA Standard 10-E and the methods proposed in the Notice, the Commission should include a requirement that the interference calculation take into account the number PCS transmitters (base and mobile) that are likely to be in simultaneous operation, and require that the addition of transmitters in the future in excess of that number require subsequent re-coordination.

^{1/} See Electronics Industries Association/Telecommunications Industry Association, Telecommunication Systems Bulletin, "Interference Criteria for Microwave Systems in the Private Radio Services," TSB 10-E, November, 1990.

II. POWER AND ANTENNA HEIGHT LIMITS FOR PCS FACILITIES

The Commission has proposed to establish upper limits on the power and antenna heights of PCS facilities, notwithstanding that, in principle, control of interference to fixed stations does not depend on the imposition of such limits. The Commission's rationale for suggesting upper limits on PCS power and antenna height is that very high PCS powers and antenna heights pose an increased risk of interference because of statistical variations in propagation and other factors used the calculations. AAR is in complete agreement with the Commission's rationale and approach on this point, and recommends the adoption of limits.

The Commission suggested two approaches to the question of limits on PCS power and antenna height. The first involves a maximum base station power of 10 watts (EIRP) and an antenna height of 91 meters (300 feet) above average terrain, with a maximum mobile power of two watts (EIRP).^{2/} The second approach involves power and antenna height limits as high as 1000 watts and 600 meters (1969 feet) for base stations and up to 200 watts (EIRP) for associated mobiles, limits that are higher than those presently imposed on 800 MHz cellular systems.

As between the two approaches, AAR believes that the lower limits are the more appropriate ones. In this regard, it is interesting to note that PCS was originally designed and conceived as a personal radio service for pedestrians with base antennas at 15 to 30 feet. While acknowledging the Commission's

^{2/} Notice at para. 115.

desire to provide maximum flexibility in the design of PCS systems, AAR believes that the more prudent course, at least at the outset, is to adopt the more conservative limits in light of the interference risks posed by statistical variations in propagation predictions which are more likely at the higher powers and antenna heights.

III. COORDINATION DISTANCES

The Commission has proposed to require that PCS operations be coordinated with any existing fixed microwave operation within interference range of the PCS facility, and has proposed to define "interference range" by extrapolating the coordination distance specified in EIA/TIA Standard 10-E for new fixed microwave stations. Thus, the Commission has proposed a fixed coordination distance of 201 km (125 miles) for PCS base stations with power and antenna height of 10 watts and 90 meters (295 feet). Further, in the event PCS stations are permitted greater powers and antenna heights, the Commission has proposed larger coordination distances based on the greater power and antenna height values. See Notice at paragraph 118, Table 1. AAR is in agreement with the coordination distance approach proposed by the Commission, with the caveat that it would be better to adopt the lower, more conservative power and antenna height limits for PCS facilities, as discussed above.

IV. POWER LIMITS FOR 2 GHZ UNLICENSED DEVICES

The Commission has recognized that unlicensed PCS devices may cause interference to existing microwave users in certain situations, and has proposed to limit the operation of such devices to a 20 MHz segment between 1910 and 1930 MHz.^{3/} The Commission is also proposing specific power limits on unlicensed PCS devices. Notice at paragraph 122. In addition, the Commission requested comment on whether other technical requirements should be placed on the operation of unlicensed devices to avoid interference to existing microwave users, i.e., automatic monitoring of spectrum before transmitting, and restricting operation so that mobiles can only transmit under the control of a base station. AAR believes that these are reasonable protective measures that ought to be required. In the Houston test, for example, PCN America proposed the use of adaptive power control of mobile units. Including a monitoring capability would be a normal function in most PCS units to minimize intrasystem interference, and including such a feature should not add significant production costs in light of current VLSI technology and capability.

V. CONCLUSION

In conclusion, AAR is in general agreement with the Commission's approach to adopting PCS technical standards that will protect existing fixed microwave users in the 2 GHz band from harmful interference. The existing EIA/TIA Standard 10-E

^{3/} Notice at para. 43.

has served the industry well by establishing an adequate interference protection threshold to protect fixed microwave facilities against interference from each other. The same standard should be adopted for protecting them against interference from new PCS facilities.

Respectfully submitted,

ASSOCIATION OF AMERICAN RAILROADS

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November 9, 1992

CERTIFICATE OF SERVICE

I, Norma E. Rusnak, a secretary for the law firm Verner, Liipfert, Bernhard, McPherson and Hand, Chartered, do hereby certify that a true and correct copy of the foregoing "Comments of Association of American Railroads" was mailed first-class, postage prepaid, this 9th day of November, 1992, to the following:

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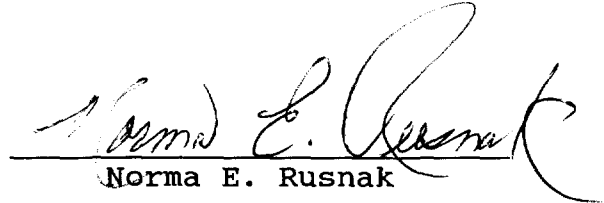
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